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# Valvular Heart Disease

## IVABRADINE PRODUCES SIMILAR IMPROVEMENT IN EXERCISE TOLERANCE AND HAEMODYNAMICS IN PATIENTS WITH MILD TO MODERATE MITRAL STENOSIS AS COMPARED TO METOPROLOL

ACC Moderated Poster Contributions
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Session Title: Mitral Stenosis: New Observations on Medical Therapy and Intervention
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**Background:** Betablockers are frequently used in patients of mitral stenosis (MS) to alleviate symptoms. Present study tested the hypothesis that heart rate (HR) reduction with Ivabradine ((I) would have the same clinical & haemodynamic benefits as metoprolol (M) in patients with mild to moderate MS in sinus rhythm.

**Methods and Results:** 33 patients (15 males, Mean age 28.8 yrs) of MS (mean MVA 1.57± 0.17 cm2) in normal sinus rhythm and NYHA II were included in study. Clinical assessment, Treadmill stress testing (TMT) and echo-Doppler evaluation was done to see resting HR, mean gradient across MV, mean pulmonary artery systolic pressure (PASP), Total Exercise Duration (TED) & peak exercising HR. Patients were then allocated to either M or I to maximal tolerated doses for 6 weeks (M: 100mg BID, I: 10 mg BID). After two-week drug washout interval, two groups were crossed over to alternate drug for another 6 weeks. Evaluation of parameters was done at end of both six weeks periods. All patients remained in normal sinus rhythm and were in NYHA class I at end of study.Results are in table below.

**Conclusions:** Ivabradine decreases resting HR and is as effective as metoprolol in increasing exercise duration, reducing transmitral gradient and PASP in mild to moderate MS with normal sinus rhythm.

| Parameters | Baseline(Mean±SD) | Metoprolol (Mean±SD) | p value | Ivabradine (Mean±SD) | p value | p value, M vs I |
|---|---|---|---|---|---|---|
| HR (BPM)<br>Resting<br>Exercise | <br>103.5±7.2<br>172.5±23.7 | <br>61.8 ±3.8<br>130.3±24.1 | <br>0.001<br>0.001 | <br>65.9 ±5.7<br>132.9±24.3 | <br>0.001<br>0.001 | <br>NS<br>NS |
| MG (mmHg) | 10.6±1.6 | 6.3 ±1.7 | 0.006 | 6.0 ±1.6 | 0.001 | NS |
| PASP (mmHg) | 38.1±5.1 | 27.7 ±4.4 | 0.004 | 28.4 ±4.2 | 0.006 | NS |
| TED (min) | 7.9±1.6 | 10.3 ±1.7 | 0.001 | 10.6 ±1.6 | 0.002 | NS |